

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-19 are currently pending, Claims 1-19 having been amended. The changes and additions to the claims do not add new matter and are supported by the originally filed specification, for example, on page 17, lines 1-6; and page 47, lines 8-13.

In the outstanding Office Action, Claims 1-19 were rejected under 35 U.S.C. §102(b) as being anticipated by Wang et al. (U.S. Pub. No. 2004/0128128, hereafter "Wang").

With respect to the rejection of Claim 1 under 35 U.S.C. §102(b), Applicants respectfully traverse this ground of rejection. Claim 1, which has been amended for clarification purposes, recites, *inter alia*,

in the transmitting unit, including, in a same packet, a frame acoustic signal, delay amount control information that has a value that indicates a difference between two frames, and acoustic signal corresponding data corresponding to a frame acoustic signal having a frame number different by the value specified by the delay amount control information from the frame number of the frame acoustic signal contained in the packet and transmitting the packet.

Applicants submit that Wang fails to disclose or suggest all of the features of Claim 1.

Wang is directed to a device for compressed-domain packet loss concealment.

Specifically, Wang relates to error concealment, where each frame of AAC (Advanced Audio Coding) is composed of a critical data part (header), scale factors part and QMDCT data part which are separately stored in three buffers 32, 34, 36 of a receiver, respectively, so that when one or more of the three data parts of a current frame are defective, defective data part in the current frame are recovered using corresponding data part of at least one neighboring frame in the buffers (see paragraphs [0012] and [0013]). For this purpose, in Wang, data parts of a current frame are stored in at least one neighboring frame (see para [0010]).

The Office Action takes the position that the previously recited features of “the acoustic signal packet communicating method being characterized by...in the transmitting unit, including, in the same packet that contains a frame acoustic signal, acoustic signal corresponding data for a frame having a frame number different by a value specified by delay amount control information from the frame number of the packet and delay amount control information and transmitting the packet,” are disclosed in paragraphs [0023], [0054], [0055], [0065] and [0070] of Wang (see Office Action, at page 5). The Office Action also takes the position that the previously recited features of and the features of “the acoustic signal packet communicating method being characterized by... in the receiving unit, if a packet loss occurs, obtaining acoustic signal corresponding data having the same frame number as that of a lost frame from the packet in the receiving buffer by using the delay amount control information included in the packet,” are disclosed in paragraphs [0022], [0054], [0058] and [0065] of Wang (see Office Action, at page 5). Applicants respectfully disagree with this position.

Paragraph [0023] of Wang describes obtaining plural data (three data parts) by decoding each frame. Paragraph [0054] describes obtaining, in case of packet loss, critical data from buffered neighboring frame by estimating MDCT window from windows of neighboring frames for example. Paragraph [0055] describes storing the critical data obtained for defective frame n from frames $n-1$ and $n+1$. Paragraph [0065] describes calculating a lag value in case the entire QMDCT coefficients are lost, determining whether inter-channel correlation or inter-frame correlation should be used and determining, with the lag value, which previous frame is to be used to replace the missing one. Paragraph [0070] of Wang describes a mobile terminal employing the error concealment method having a transmitter and a receiver. **Applicants emphasize that these features of the error**

concealment disclosed in these specified paragraphs are implemented in a receiving side, but not to a transmitting side.

Thus, Applicants submit that the cited paragraphs of Wang noted above, fail to disclose or suggest “*in the transmitting unit*, including, in a same packet, a frame acoustic signal, delay amount control information that has a value that indicates a difference between two frames, and acoustic signal corresponding data corresponding to a frame acoustic signal having a frame number different by the value specified by the delay amount control information from the frame number of the frame acoustic signal contained in the packet and transmitting the packet,” as required by amended Claim 1.

Applicants note that Wang does describe a transmitting side in paragraphs [0051] to [0053], the latter one of which particularly describes about embedding critical data in multiple packets to be transmitted. However, these paragraphs do not disclose or suggest “in the transmitting unit, including, in a same packet, a frame acoustic signal, delay amount control information that has a value that indicates a difference between two frames, and acoustic signal corresponding data corresponding to a frame acoustic signal having a frame number different by the value specified by the delay amount control information from the frame number of the frame acoustic signal contained in the packet and transmitting the packet,” as required by amended Claim 1.

Furthermore, Applicants note that paragraph [0022] of Wang describes an audio receiver which unpacks received packet data into an audio signal bitstream which includes a current frame and at least one neighboring frame. Also, Paragraph [0058] of Wang describes decoding¹ scale factors using global gain and the Huffman table if packet loss is in the AAC scale factors only. However, none of these paragraphs as well as paragraphs [0054], [0065]

¹ Applicants note that in the fourth line of para [0058] of Wang, it is described that “can be used to code the”. However, since para [0058] is explaining the measures when packet loss is in the AAC scale factors, it is apparent that the measures are taken at the receiving side, that is, the quoted phrase should be read as “can be used to decode the”

describes anything about “in the transmitting unit, including, in a same packet, a frame acoustic signal, delay amount control information that has a value that indicates a difference between two frames, and acoustic signal corresponding data corresponding to a frame acoustic signal having a frame number different by the value specified by the delay amount control information from the frame number of the frame acoustic signal contained in the packet and transmitting the packet,” as required by amended Claim 1.

Additionally, the examiner appears to interpret that the lag value recited in paragraph [0065] of Wang might correspond to “the delay amount control information” recited in the claims of the present application. Applicants respectfully disagree. Paragraph [0065] of Wang describes calculating a lag value to determine whether inter-channel or inter-frame correlation should be used, and based on the lag value it is determined which previous frame is to be used to replace the missing one. The lag value is defined in paragraph [0062], where scale factors for the right channel of frame n are lost, if the partial Euclidian distance d_1 between the left and right channels of frame $n-1$ and the partial Euclidian distance d_2 between the left channel of frame $n-1$ and the left channel of frame n satisfies $d_1 > d_2$, then it is defined as $\text{lag}=2$, and if $d_1 < d_2$, then it is define as $\text{lag}=1$. Thus, the lag value defined at the receiving side, based on which it is determined by which previous frame the lost frame should be replaced.

Therefore, Wang's lag value has nothing to do with “the delay amount control information” recited in Claim 1.

The delay amount control information according to Claim 1 is produced at the transmitting side to specify the difference in frame number between each frame of "frame acoustic signal" and the frame of "acoustic signal corresponding data" to be contained in a same packet. Using the delay amount control information, it is possible for the receiving side

to retrieve "acoustic signal corresponding data" of the same frame number as that of a lost frame from one of packets other than the lost packet in a receiving buffer.

Thus, while paragraph [0053] of Wang describes embedding critical data in plural packets and transmitting the packets, it still does not disclose or suggest anything about "in the transmitting unit, including, in a same packet, a frame acoustic signal, delay amount control information that has a value that indicates a difference between two frames, and acoustic signal corresponding data corresponding to a frame acoustic signal having a frame number different by the value specified by the delay amount control information from the frame number of the frame acoustic signal contained in the packet and transmitting the packet," as required by amended Claim 1.

Applicants emphasize that for anticipation, "**[t]he identical invention must be shown in as complete detail as is contained in the ... claim.**" See *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). (See also MPEP §2131).

Therefore, Applicants submit that for all the reasons discussed above, Claim 1 (and all associated dependent claims) patentably distinguishes over Wang.

Independent Claims 5, 9, 12 and 13 recite features similar to those of Claim 1 discussed above. Therefore, Applicants submit that Claims 5, 9, 12, and 13 (and all associated dependent claims) patentably distinguish over Wang.

Furthermore, Applicants note that independent Claim 5 recites, *inter alia*,

the acoustic signal packet transmitting method characterized by comprising the step of, in the transmitting unit, including, in a same packet, the frame acoustic signal, delay amount control information that has a value that indicates a difference between two frame numbers, and acoustic signal corresponding data corresponding to a frame acoustic signal having a frame number different by the value specified by the delay amount control information from the frame number of the frame acoustic signal contained in the packet and transmitting the packet.

The Office Action takes the position that Wang discloses the above-mentioned features on paragraphs [0003] and [0004]). Paragraph [0003] of Wang describes the causes of packet loss and paragraph [0004] describes conventional UEP (unequal error protection) effective for error concealment. However, these portions of Wang do not disclose or suggest anything about “in the transmitting unit, including, in a same packet, the frame acoustic signal, delay amount control information that has a value that indicates a difference between two frame numbers, and acoustic signal corresponding data corresponding to a frame acoustic signal having a frame number different by the value specified by the delay amount control information from the frame number of the frame acoustic signal contained in the packet and transmitting the packet,” as required by Claim 5.

Therefore, Applicant submit that independent Claim 5 (and all associated dependent claims) patentably distinguishes over Wang for the additional above-noted reasons.

With respect to the rejection of dependent Claim 2 under 35 U.S.C. §102(b), Applicants respectfully traverse this ground of rejection. Claim 2 recites, *inter alia*,

in a respective receiving unit of the first communication apparatus or the at least one second communication apparatus,

both or one of a first determining step of determining a jitter state of a received packet and a second determining step of determining a loss state of a received packet, and

a step of using the result of the determination made in any of the determining steps to determine the number of packets to be stored in the receiving buffer as a targeted value of the number of stored packets; and

in the transmitting unit in the same communication apparatus that includes the respective receiving unit,

a step of setting the delay amount control information to a value smaller than or equal to the targeted value of the number of the stored packets.

The Office Action takes the position that Wang discloses the features of original Claim 2 at paragraphs [0003], [0004], [0008], [0022], [0054], [0062], [0065], and [0070]. (See Office Action, at pages 5-6). Paragraph [0003] describes the causes of packet loss. Paragraph [0004] describes conventional UEP (unequal error protection) effective for error concealment. Paragraph [0008] describes recovering packet loss caused by transmission. Paragraph [0022] describes unpacking packet data into a bitstream. Paragraph [0054] describes about the receiving side storing critical data and, in case of packet loss, deriving critical part from neighboring frames such that MDCT window of frame n is determined from corresponding data of neighboring frames. Paragraph [0062] describes calculating, in case of frame loss, Euclidian distances as inter-channel or inter-frame correlation and determining the previously mentioned lag value. Paragraph [0065] describes determining, in case of frame loss, which previous frame should be used to replace the lost frame. Paragraph [0070] describes, with reference to Fig. 1, a mobile terminal having a transmitter and a receiver, the receiver having an error concealment modules and a buffer 322 which comprises buffers 32, 34, 36 shown in Fig. 12.

However, while Wang describes determining packet loss in the receiving unit in a communication apparatus as a necessary function, there is no still no description of determining a jitter state of received packets in addition to a packet loss state, and determining the number of packets to be stored in a receiving buffer at the receiving side based on determination result of jitter state and/or loss state. Wang also does not describe anything about setting, at the transmitting unit in the same communication apparatus, the delay amount control information to a value smaller than or equal to a target value of the number of stored packets.

Therefore, Applicants submit that Wang fails to disclose or suggest “both or one of a first determining step of determining a jitter state of a received packet and a second

determining step of determining a loss state of a received packet; and the step of using the result of the determination made in any of the determining steps to determine the number of packets to be stored in the receiving buffer as a targeted value of the number of stored packets,” and “in the transmitting unit in the same communication apparatus that includes the respective receiving unit, the step of setting the delay amount control information to a value smaller than or equal to the targeted value of the number of the stored packets,” as required by Claim 2.

Therefore, Applicants respectfully submit that dependent Claim 2 (and similarly, Claim 14) patentably distinguishes over Wang for at least the foregoing reasons.

With respect to the rejection of dependent Claim 3 under 35 U.S.C. §102(b), Applicants respectfully traverse this ground of rejection. Claim 3 recites, *inter alia*,

in a respective receiving unit of the first communication apparatus or the at least one second communication apparatus,

both or one of a first determination step of determining a jitter state of a received packet and a second determination step of determining a loss state of a received packet,

a step of using the result of the determination made in the determination step to determine the number of packets to be stored in the receiving buffer as a targeted value of the number of stored packets, and

a step of sending the targeted value of the number of stored packets to the transmitting unit in the same communication apparatus; and

in the transmitting unit in the same communication apparatus that includes the respective receiving unit,

a step of containing the targeted value of the number of stored packets sent from the receiving unit in a packet as information for specifying delay amount control information to be set in the transmitting unit at the other end of communication.

Regarding Claim 3, the Office Action cites to previously discussed paragraphs [0054], [0070], [0022], [0062], [0065], and [0020]. (See Office Action, at page 7). However, Wang does not disclose anything about determining, at the receiving unit, a target value of number of packets to be stored in a receiving buffer and containing, at the transmitting unit, the target value as delay amount control information in a packet together with the frame acoustic signal and acoustic signal corresponding data to be transmitted. Therefore, Applicants submit that Claim 3 (and similarly, Claim 15) patentably distinguishes over Wang, for at least the foregoing reasons.

With respect to the rejection of dependent Claim 4 under 35 U.S.C. §102(b), Applicants respectfully traverse this ground of rejection. Claim 4 recites, *inter alia*,

in a respective receiving unit of the first
communication apparatus or the at least one second
communication apparatus,

a step of measuring the number of packets
stored in the receiving buffer as a remaining buffer amount,
and

a step of sending the remaining buffer amount
to the transmitting unit in the same communication
apparatus; and

in the transmitting unit in the same communication
apparatus that includes the respective receiving unit,

a step of containing the remaining buffer
amount sent from the receiving unit in a packet as
information for specifying delay amount control
information to be set in the transmitting unit at the other
end of communication and transmitting the packet.

Regarding Claim 4, the Office Action cites to previously discussed paragraphs [0003], [0004], [0008], [0054], [0070] and [0065]. However, the cited portions of Wang do not disclose or suggest anything about measuring, at the receiving unit in a communication apparatus, the number of packets remained in a receiving buffer and containing, at the transmitting unit in the same communication apparatus, the number of remaining packets in a

packet as delay amount control information. Therefore, Applicants submit that Claim 4 patentably distinguishes over Wang, for at least the foregoing reasons.

With respect to the rejection of dependent Claim 6 under 35 U.S.C. §102(b), Applicants respectfully traverse this ground of rejection. Claim 6 recites, *inter alia*,

in a respective transmitting unit of the first communication apparatus or the at least one second communication apparatus, setting the delay amount control information to a value smaller than or equal to the number of packets to be stored in the receiving unit in the same communication apparatus that includes the respective transmitting unit, the number of packets being determined at that receiving unit.

Regarding Claim 4, the Office Action cites to previously discussed paragraphs [0003], [0004], [0070], [0054] of Wang. However, Applicants submit that these cited portions of Wang do not disclose or suggest anything about setting the delay amount control information to a value smaller than or equal to the number of packets to be stored in the receiving unit. Therefore, Applicants submit that Claim 6 patentably distinguishes over Wang, for at least the foregoing reasons.

With respect to the rejection of dependent Claim 7 under 35 U.S.C. §102(b), Applicants respectfully traverse this ground of rejection. Claim 7 recites, *inter alia*,

in a respective transmitting unit of the first communication apparatus or the at least one second communication apparatus, containing in a packet the number of the packets to be stored in the receiving unit of the same communication apparatus that includes the respective transmitting unit, the number of packets being determined at that receiving unit, as information for specifying delay amount control information to be set in the transmitting unit at the other end of communication and transmitting the packet.

Regarding Claim 7, the Office Action cites to previously discussed paragraphs [0003], [0070], [0004], [0062] of Wang. However, Applicants submit that these cited portions do not disclose or suggest anything about containing in a packet the number of packets stored at the

receiving unit as information specifying delay amount to be set at a transmitting unit of another communication apparatus. Therefore, Applicants submit that Claim 7 patentably distinguishes over Wang, for at least the foregoing reasons.

With respect to the rejection of dependent Claim 8 under 35 U.S.C. §102(b), Applicants respectfully traverse this ground of rejection. Claim 8 recites, *inter alia*,

in a respective transmitting unit of the first communication apparatus or the at least one second communication apparatus, containing in a packet the number of packets stored in the receiving buffer that is measured in the receiving unit in the same communication apparatus that includes the respective transmitting unit, as information for requesting to set delay amount control information to be set in the transmitting unit at the other end of communication.

Regarding Claim 8, the Office Action cites to previously discussed paragraphs [0054], [0062], [0065], [0070] of Wang. However, Applicants submit that these cited portions do not disclose or suggest anything about containing, in a packet, the number of packets stored in the receiving buffer as information for requesting to be set at a transmitting unit of another communication apparatus. Therefore, Applicants submit that Claim 8 patentably distinguishes over Wang, for at least the foregoing reasons.

With respect to the rejection of dependent Claim 10 under 35 U.S.C. §102(b), Applicants respectfully traverse this ground of rejection. Claim 10 recites, *inter alia*,

in a respective receiving unit of the first communication apparatus or the at least one second communication apparatus,

both or one of a first determination step of determining a jitter state of a received packet and a second determination step of determining a lost state of a received packet,

a step of determining the number of packets to be stored in a receiving buffer by using the result of the determination made at any of the determination steps, and

a step of sending the number of packets to be stored in the receiving buffer to the transmitting unit in the same communication apparatus that includes the respective receiving unit.

Regarding Claim 10, the Office Action cites to previously discussed paragraphs [0022], [0054], [0062], [0065], [0070] of Wang. However, Applicants submit that these cited portions do not disclose or suggest anything about determining the number of packets to be stored in a receiving buffer and providing the number to the transmitting unit in the same communication apparatus. Therefore, Applicants submit that Claim 10 patentably distinguishes over Wang, for at least the foregoing reasons.

With respect to the rejection of dependent Claim 11 under 35 U.S.C. §102(b), Applicants respectfully traverse this ground of rejection. Claim 11 recites, *inter alia*,

in a respective receiving unit of the first communication apparatus or the at least one second communication apparatus,

measuring the number of packets stored in the receiving buffer as a remaining buffer amount, and

sending the remaining buffer amount to the transmitting unit in the same communication apparatus that includes the respective receiving unit.

Regarding Claim 11, the Office Action cites to previously discussed paragraphs [0003], [0070], [0054] of Wang. However, Applicants submit that these cited portions do not disclose or suggest anything about counting the number of packets remaining in the receiving buffer and providing the number to the transmitting unit in the same communication apparatus. Therefore, Applicants submit that Claim 11 patentably distinguishes over Wang, for at least the foregoing reasons.

With respect to the rejection of dependent Claim 16 under 35 U.S.C. §102(b), Applicants respectfully traverse this ground of rejection. Claim 16 recites, *inter alia*,

the receiving unit has means for measuring the number of packets stored in the receiving buffer as a remaining buffer amount; and

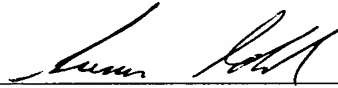
the transmitting unit has means for including the remaining buffer amount in the same packet that contains the frame acoustic signal as information for specifying delay amount control information to be set in the transmitting unit at the other end of communication and transmitting the packet.

Regarding Claim 16, the Office Action cites to previously discussed paragraphs [0023], [0054], [0055], and [0065] of Wang. Wang explains in paragraph [0055] that there are at least two methods for recovering critical data of lost frame n from frames $n-1$ and $n+1$. However, Wang does not disclose or suggest measuring the number of packets remaining in the receiving buffer (i.e., remaining buffer amount) and transmitting the remaining buffer amount as delay amount control information in the same packet that contains frame acoustic signal. Therefore, Applicants submit that Claim 16 patentably distinguishes over Wang, for at least the foregoing reasons.

Consequently, in light of the above discussion and in view of the present amendment, the outstanding grounds for rejection are believed to have been overcome. The present application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested. Furthermore, the examiner is kindly invited to contact the Applicants' undersigned representative at the phone number below to resolve any outstanding issues.

Respectfully submitted,

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